

REMARKS/ARGUMENTS

Claims 3, 8, 9, 41, and 42 have been cancelled. Claims 1, 2, 10, 11, 12, and 40 have been amended. Claim 43 has been added.

The Examiner requested the renumbering of claims 19-21. The claims have been renumbered accordingly.

Rejections Under 35 U.S.C. § 112, second paragraph

Claim 8 was rejected to under 35 U.S.C. 112, second paragraph, as being indefinite and for failing to particularly point out and distinctly claim the invention. Claim 8 has been cancelled accordingly,

The Examiner rejected and objected to claims 2, 41, and 42 under 35 U.S.C. 112 and 37 CFR 1.75(d)(1). The claims have been amended or cancelled accordingly.

Accordingly, Applicants respectfully submit that all pending claims are sufficiently clear and definite and thus respectfully request withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 102 & 103(a)

Claims 12-14, 18, and 42 stand rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a), as obvious, over Maydan et al., U.S. Patent No. 5,746,875 (“Maydan”). Applicants respectfully traverse.

Claims 12-14, 18, and 42 stand rejected under 35 U.S.C. §103(a), as obvious, over Maydan et al., U.S. Patent No. 5,746,875 (“Maydan”) in view of Gupta, U.S. Patent No. 6,083,451. Applicants respectfully traverse.

Claims 1-6, and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a), as obvious, over Maydan et al., U.S. Patent No. 5,746,875 (“Maydan”). Applicants respectfully traverse.

Claims 1-6, and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shang et al., U.S. Patent No. 6,182,603 B1 (“Shang”) in view of Maydan et al., U.S. Patent No. 5,746,875 (“Maydan”). Applicants respectfully traverse.

Claims 12-14 and 18 stand rejected under 35 U.S.C. §102(e) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a), as obvious, over Wicker I et al., U.S. Patent No. 5,993,584 (“Wicker I”). Applicants respectfully traverse.

Claims 1-14, 18, and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wicker I et al., U.S. Patent No. 5,993,584 (“Wicker I”) or Wicker II, U.S. Patent No. 5,863,376 taken in view of Maydan, U.S. Patent No. 5,746,875, Chen, U.S. Patent No. 5,824,605, and optionally in further view of the applicants’ description of the prior art. Applicants respectfully traverse.

Claims 1-14, 18, and 40-42 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,824,605 to Chen in view of Maydan et al (5,746,875) and Gupta (6,083,451). Applicants respectfully traverse.

Regarding the rejection of claims 12-14, 18, and 42 as being anticipated by or obvious under Maydan, the enclosed declaration states that the polishing method described in Maydan does not produce the same resulting GDP as the process in claim 12. The Examiner argued that since the step of heating was a product-by-process claim, that prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim. As stated in the declaration, Maydan does not provide an identical or only slightly different product, since, according to the declaration, the inventive product substantially eliminates contaminates that are not substantially eliminated by Maydan. Claim 42 has been cancelled. Claims 13-14, and 18 are ultimately dependent on claim 12 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Maydan. Therefore, Maydan does not provide an identical or only slightly different product than the invention as recited in claims 12-14, and 18.

Regarding the rejection of claims 12-14, 18, and 42 under 35 U.S.C. §103(a), as being obvious, over Maydan et al., U.S. Patent No. 5,746,875 (“Maydan”) in view

of Gupta, U.S. Patent No. 6,083,451, the Applicants respectfully disagrees.

Regarding the above mentioned shortcomings of Maydan, Gupta does not teach a particular dimension of defect which is eliminated by heat treatment. In addition, claim 12 has been amended to recite that the annealing is done after the ceramic surface is machined. Nothing in Gupta that teaches annealing of machined surfaces. Col. 4, lines 13 to 28, of Gupta describes how alumina powder is formed into a green body, which is sintered with heat for 8-12 hours. Neither Maydan nor Gupta teach or suggest annealing a surface after the surface is machined to remove damage caused by the machining. In addition, the Examiner did not point out anything in Gupta that recites drilled holes. Claim 42 has been cancelled. Claims 13-14, and 18 are ultimately dependent on claim 12 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Maydan and Gupta. For at least these reasons, claim 12-14, and 18 are not made obvious by Maydan in view of Gupta.

Regarding the rejection of claims 1-6 and 8 as being anticipated by or made obvious under Maydan, Maydan teaches away from drilled holes for passing process gases to the semiconductor processing chamber. Maydan in col. 1, lines 66 to 67, teaches that holes cause particularly acute problems. Col. 5, line 57, to col. 6, line 5, of Maydan explains that the slotted apertures or nozzles 60 are provided by closely placed block elements 42, 44, 46, and 50 which may be machined as separate pieces and externally polished prior to assembly, which prevent the problems caused by the holes. Although drilled holes may be known, since Maydan teaches away from drilled holes it would not be obvious to use drilled holes on the device of Maydan. In addition, claim 1 has been amended to further recite that the defects are substantially eliminated by annealing subsequent to machining the ceramic surface. As discussed above, regarding claim 12, this is not disclosed or made obvious by Maydan and the product disclosed by Maydan is significantly different than the product recited in claim 1. The drilled holes provide for the production of an integral part, as opposed to an assembly, as taught in Maydan. Claims 3 and 8 have been cancelled. Claims 2 and 4-6 are ultimately dependent on claim 1 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Maydan. For at least these reasons, claims 1-2 and 4-6 are not anticipated by or made obvious by Maydan.

Regarding the rejection of claims 1-6, and 8 as being unpatentable over Shang in view of Maydan, claim 1 has been amended to recite that the GDP has a ceramic surface and that the micro-defects are substantially eliminated by annealing the portion subsequent to machining the surface. Shang discloses an aluminum surface, not a ceramic surface. In addition, neither Shang nor Maydan disclose annealing after the ceramic surface is machined. Claims 3 and 8 have been cancelled. Claims 2 and 4-6 are ultimately dependent on claim 1 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Shang in view of Maydan. For at least these reasons, claims 1-2 and 4-6 are not anticipated by or made obvious by Shang in view of Maydan.

Regarding the rejection of claims 12-14, 18, and 42 as being anticipated by or obvious under Wicker I, Wicker I does not disclose or make obvious the annealing of a machined surface, after the surface is machined to provide a gas distribution plate that has substantially no micro-defects about 50 micrometers or greater, as recited in claim 12, as amended. Nothing in Wicker I suggest this. Wicker I describes sintering a powder into a GDP body. The invention may then have the sinter body machined, which creates micro-defects. A subsequent annealing after the machining is used to substantially eliminate the micro defects. Claim 42 has been cancelled. Claims 13-14, and 18 are ultimately dependent on claim 12 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Wicker I. For at least these reasons, claim 12-14, and 18 are not anticipated or made obvious by Wicker I.

Regarding the rejection of claims 1-14, 18, and 40-42 as being unpatentable over Wicker I or Wicker II in view of Maydan and Chen and optionally in further view of the applicants' description of the prior art, as described above, claims 1 and 12 have been amended to recite that an annealing is performed subsequent to the machining of a ceramic surface to substantially eliminate micro-defects about 50 micrometers or greater. None of the references discuss annealing after machining a ceramic surface to substantially eliminate micro-defects. Claims 3, 8, 9, 41, and 42 have been cancelled. Claims 2, 4-7, 10-11, 13-14, 18, and 40 are ultimately dependent on claims 1 and 12 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Wicker I or Wicker II in view of Maydan and Chen and optionally in further view of the applicants' description of

the prior art. For at least these reasons, claims 1-2, 4-7, 10-14, 18, and 40 are not made obvious by Wicker I or Wicker II in view of Maydan and Chen and optionally in further view of the applicants' description of the prior art.

Regarding the rejection of claims 1-14, 18, and 40-42 as being unpatentable over Chen in view of Maydan and Gupta, as described above claims 1 and 12 have been amended to recite that an annealing is performed subsequent to the machining of a ceramic surface to substantially eliminate micro-defects about 50 micrometers or greater. None of the references discuss annealing after machining a ceramic surface to substantially eliminate micro-defects. Claims 3, 8, 9, 41, and 42 have been cancelled. Claims 2, 4-7, 10-11, 13-14, 18, and 40 are ultimately dependent on claims 1 and 12 and have additional features, when taken in the context of the claimed invention, further patentably distinguish Chen in view of Maydan and Gupta. For at least these reasons, claims 1-2, 4-7, 10-14, 18, and 40 are not made obvious by Chen in view of Maydan and Gupta.

In view of the foregoing, Applicants believe that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

No fees are believed due in connection with the filing of this paper. However, if any fees are due in connection with the filing of this paper the Commissioner is authorized to charge such fees to Deposit Account 50-0388 (Order No. LAM1P118).

Respectfully submitted,
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